

Energy Efficiency and savings in México: Past, present and future

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Overview: More than 25 years of work on Energy Efficiency in Mexico



- Two well-known established Institutions
 - National Commission for the Efficient Use of Energy, **Conuee**
 - The Trust for electricity savings, **FIDE**
- Among the most successful EE programs we can find:
 - Thermal housing envelope program (FIPATERM)
 - Seal FIDE
 - Mexican Official Standards on EE (NOM)
 - The High Efficiency Lighting Project (ILUMEX)
 - Daylight saving time
 - Program for the replacement of electro domestic appliances (PSEE)
 - Sustainable lighting program
 - Programs aimed at public sector buildings
 - National Energy Efficiency Project for Municipal Public lighting



Main attributions of Conuee:

- To establish mandatory official standards on EE (NOM)
- Develop a program directed towards private sector end-users, seeking to promote the certification of processes, products and services, as well as to providing follow-up on the implementation of energy efficiency improvements.
- Development of the National Program for the Sustainable Use of Energy (PRONASE).
- Follow up of the information regarding energy utilization for large energy consumption users (UPACS) that implies penalties for failing to meet.
- To elaborate and issue methodologies and procedures to quantify energy use, as well as those to measure the avoided processes resulting from sustainable energy use.

Main attributions of Conuee:

- To implement a National Information subsystem of sustainable energy use.
- To establish EE General Provisions for the Federal Public Administration
- To implement a national registry of end-users certified as energy responsible
- Elaborate and issue quantitative methodologies to measure the greenhouse gas emissions, as well as those to quantify the avoided emissions product of the implementation of sustainable energy use measures.
- To develop a catalog containing energy consumption for specific equipment and appliances

Results: High Efficiency Lighting Project (ILUMEX) 1995-1998



- The program achieved to sell more than 2.45 million of compact fluorescent lamps, being the largest program of this type for that time
- 302 GWH of electricity savings
- 56 MW of reduction in peak demand
- 233 thousand tons of CO₂ were not released into the atmosphere
- It has been copied in other parts of the world: Southafrica, Cuba, Venezuela
- Is the base for programs operated by FIDE

Results: Mexican Official Standards on EE (NOM)

- In 1995 entered into force for the first time the EE standards for four appliances: refrigerators and freezers, air conditioners, domestic pumps for water and electric motors.
- By 2003 the homologation of three Standards on EE (electric motors, refrigerators and air conditioning) with North America was achieved
- CONUEE published in 2010 the EE standard for lamps of general use and as a result of this NOM the commercialization of incandescent lamps was forbidden for 100W in dec 2011, for 75W in dec 2012 and for 60W and 40W in dec 2014.

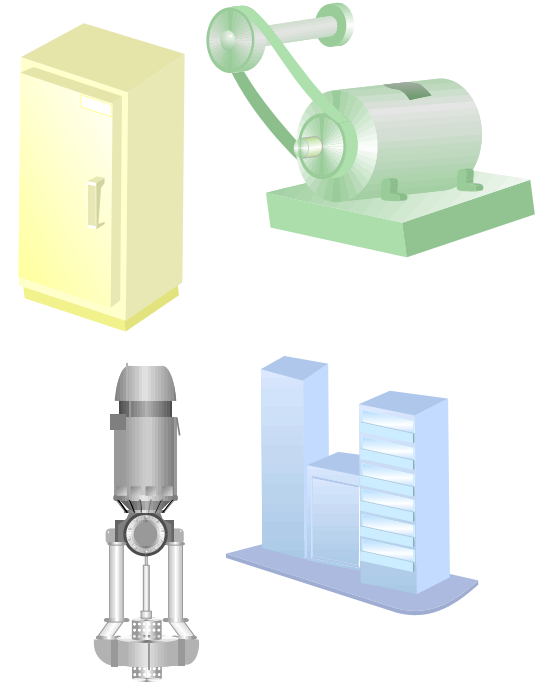
Results: Mexican Official Standards on EE (NOM)

By 2013:

- **Electricity annual savings of 11,782 (GWh)**
 - Equivalent to the electricity consumption of the state of Sonora for 2013
 - Generation capacity avoided of 1,680 MW

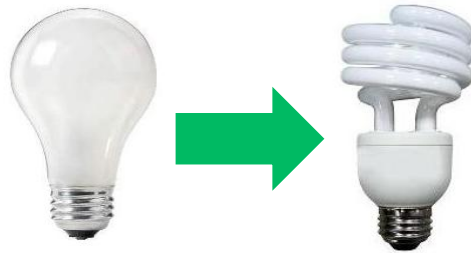
By April 2015:

- **28 NOM in force**
- 60 accredited and approved laboratories
- 8 accredited certification organisms
- 236 verification units, till novembre 30th 2014



Results: Sustainable lighting program 2009-2012

- Comprised two pilot stages between: 2009-2010 and from 2011-2012. Its objective was the free replacement of incandescent lamps for compact fluorescent lamps. The result was the **distribution of 47.2 millions of compact fluorescent lamps in all the country.**



The Program for the replacement of electro domestic appliances (PSEE)

- Operated by FIDE, replaced around 1.8 millions of appliances



Results: National EE Project for Municipal Lighting

By 2014:

- Technical assistance to **250** municipalities
- **63** incorporated municipalities
- **11 Projects supported with resources from the Fund for energy transition and sustainable use of energy (FOTEASE)**
 - *\$45.8 millions coming from FOTEASE*
- **17** ongoing projects

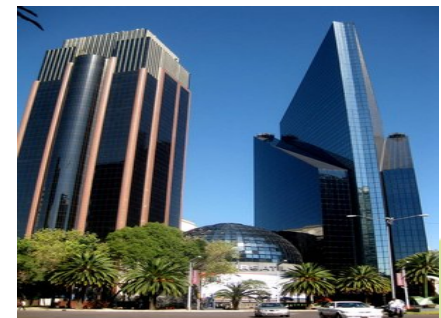


CONUEE
COMISIÓN NACIONAL PARA EL
USO EFICIENTE DE LA ENERGÍA

Results EE federal public administration

By 2014

- **Industrial facilities:** energy savings are estimated about \$1,575 million pesos
 - 1.35 million BOE
 - 575 thousand tons of CO₂ avoided
 - Mainly in Pemex and CFE
- **Vehicle fleets:** energy savings are estimated about \$233 million pesos
 - 17.39 million liters of fuel
- **Buildings:** energy savings are estimated about \$37 million pesos
 - 20.59 GWh
- In 2014, total savings are estimated about \$1,279 million pesos (9.13 TeraJoules of non consumed energy).
- The emission of 630 thousand tons of CO_{2eq} was avoided.



So far....

- Focused on equipments/appliances and on the follow up of energy consumption in public buildings and facilities.
- Less focused on a system vision of the facilities
- Limited role to the business of consulting for the development of projects
- Limited attention to the issue of transport
- Lack of formal institutional capacities
 - In particular for states and municipalities
- Delayed in terms of new approaches in the international context
 - Like the energy management systems

The role of public policy in EE

- **Provide technical certainty**
 - Through standards (NOM) that guarantee quality and energetic performance
 - Through certification of products, equipment, facilities, people and/or companies
 - Through reliable information and impact evaluation of EE measures.
- **Reduce transaction costs to carry out energy efficiency measures**
 - Generating economies of scale through programs that add users
 - By facilitating access to useful information
 - Strengthening users and other actors technical capacity to communicate
 - Generating standard instruments for recruitment
 - Acting as a link between market players and users



Conuee's priorities

- **Ensure, mantain and verify compliance of the Standards (NOM) oriented to systems**
 - Lighting
 - Public
 - Buildings
 - Envelope
 - Housing
 - Non- residential buildings
- **Modernization of the public sector program**
- Simplify formalities between Conuee and institutions
 - Through ESCO schemes
 - Implementation of ISO 50001 in large facilities
 - Using benchmarks
- **Modernize the management of large energy users**
- Through systems type ISO-50001
 - Including PEMEX and CFE



- **Support the development of intermediary companies involved in energy saving projects (ESCO)**
- **Support states and municipalities for the development of energy saving projects**
 - National Energy Efficiency Project for Municipal Public lighting
 - Advertisement of EE Standards (NOM)
 - Support initiatives of sustainable mobility
- **Strengthen the capacity of program evaluation**
- **Strengthen international cooperation**



Relevant progress

- New EE Standards (NOM)
 - Light vehicles
 - Gas stoves
 - Public lighting systems
 - Stand by energy

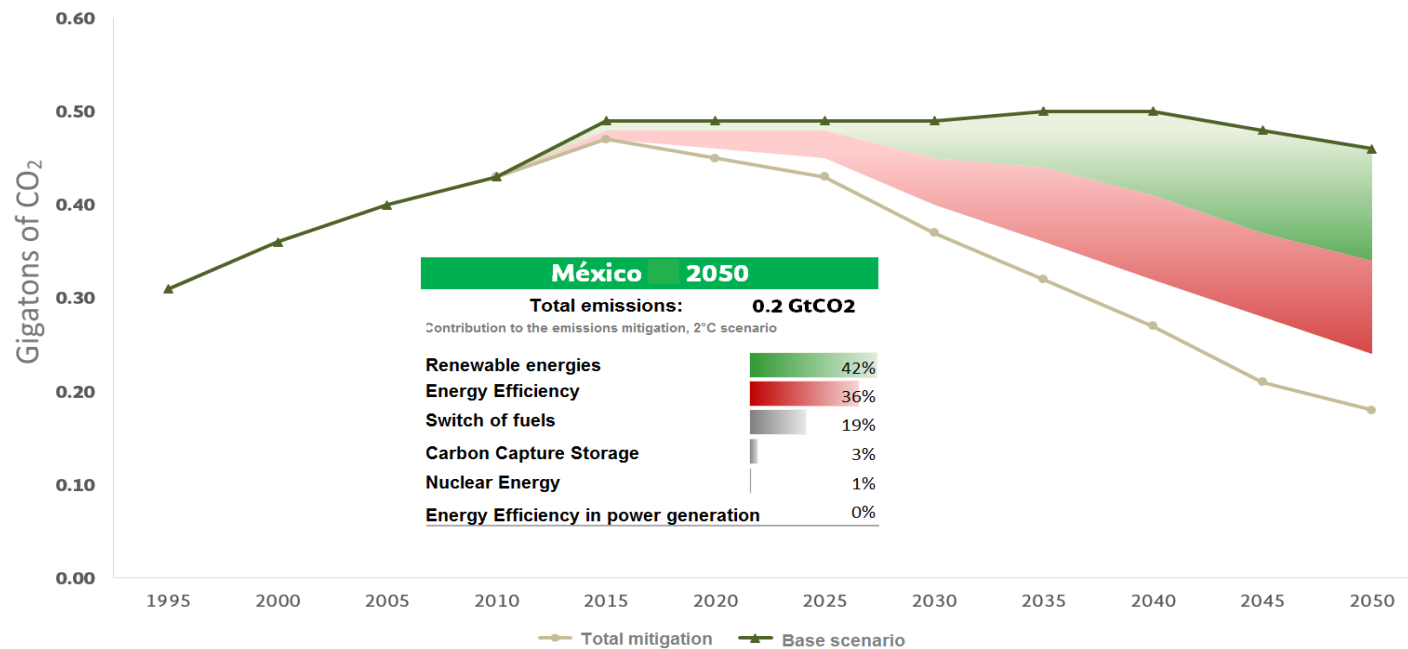


- Energy Efficiency General Provisions for the Federal Public Administration
 - Buildings, industrial facilities and vehicular fleet
- National Energy Efficiency Project for Municipal Public lighting
- Expansion of its technical committee to integrate actors from the private sector and other government agencies
- Permanent workshops on buildings and transport
- Implementation of measures and actions towards the ESCO scheme in the Federal Public Administration
- Creation of the Energy management system program (Pronasgen)

Energy efficiency policies and climate change mitigation

The energy efficiency policies are a number of strategies, legislation, regulations, and programs that together stimulate energy efficiency improvements.

**Mitigation of national emissions,
6°C to 2°C Scenario**



Source: Energy Technology Perspectives model 2014, International Energy Agency

www.conuee.gob.mx



<http://www.conuee.gob.mx/fenix/programas/listas/Listalnt.jsp>

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